

## / Descriptions

TO-92 Voltage Regulator in a TO-92 Plastic Package.

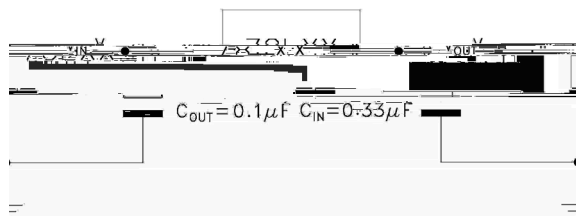
## / Features

100mA,  
3-Terminal regulators ,output current up to 100 mA, internal thermal overload protection and short-circuit limiting.

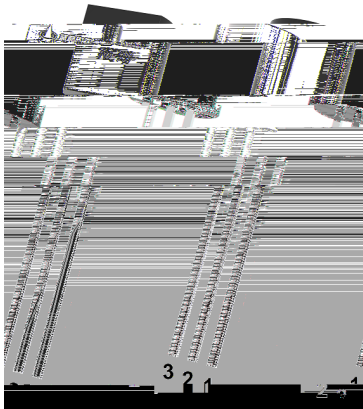
## / Applications

Voltage Regulator.

## / Equivalent Circuit or Application Circuit



## / Pinning



PIN1 IN      PIN 2 GND      PIN 3 OUT

## / Marking

See Marking Instructions.

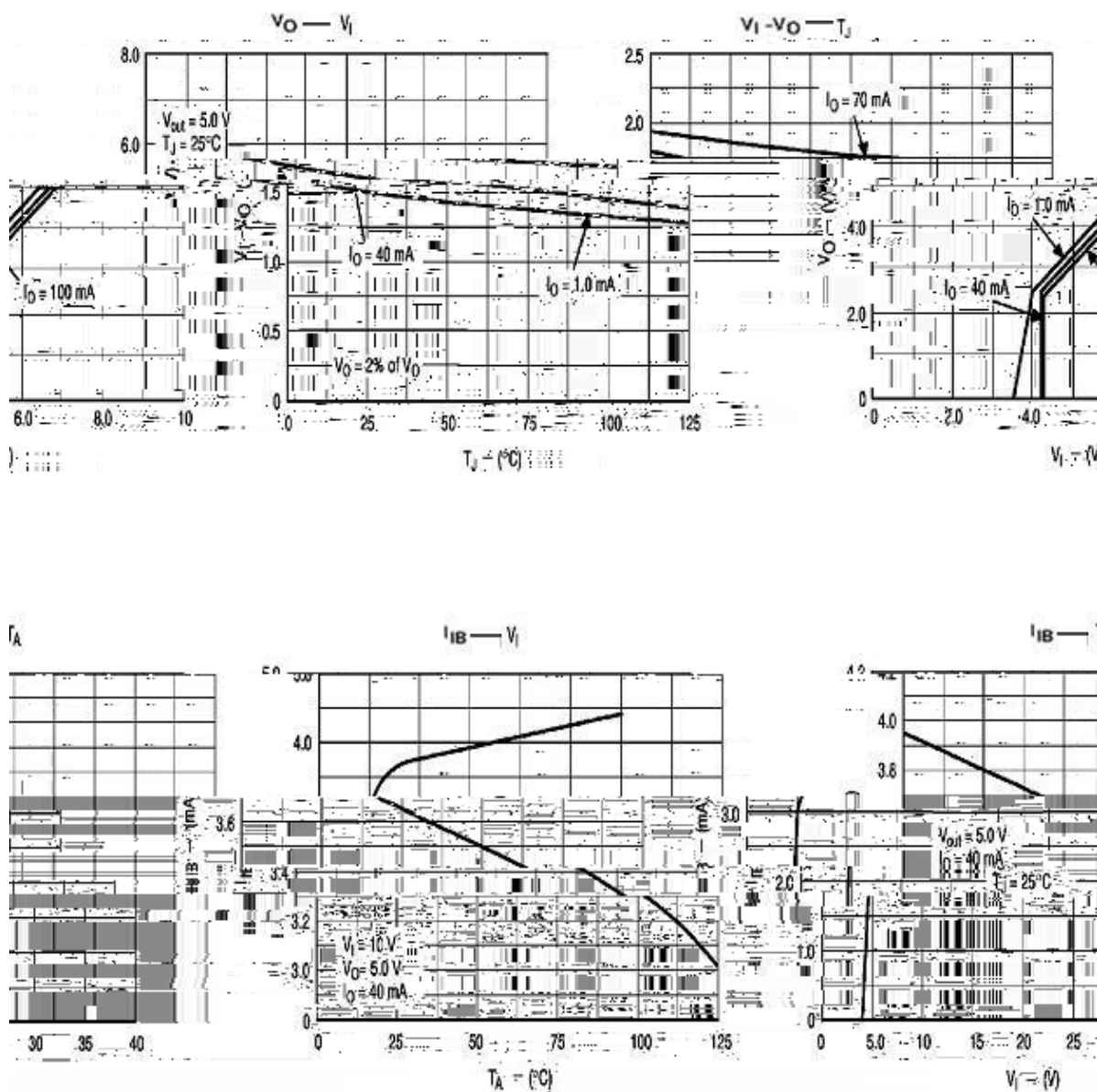
/ Absolute Maximum Ratings( $T_a=25^\circ\text{C}$ )

| Parameter                   | Symbol    | Rating  | Unit |
|-----------------------------|-----------|---------|------|
| Input voltage               | $V_I$     | 30      | V    |
| Output current              | $I_O$     | 100     | mA   |
| Operating Temperature Range | $T_{OPR}$ | -40~125 |      |
| Power Dissipation           | $P_D$     | 500     | mW   |
| Storage temperature range   | $T_{stg}$ | -65~150 |      |

/ Electrical Characteristics( $T_a=25^\circ\text{C}$   $V_I=10\text{V}, I_O=40\text{mA}$  unless otherwise specified)

| Parameter            | Symbol       | Test Conditions                                                          | Min  | Typ | Max  | Unit          |
|----------------------|--------------|--------------------------------------------------------------------------|------|-----|------|---------------|
| Output voltage       | $V_O$        | $I_O=40\text{mA}$ $T_J=25^\circ\text{C}$                                 | 4.80 | 5.0 | 5.2  | V             |
|                      |              | $I_O=1\text{mA to }40\text{mA}$<br>$V_I=7\text{V to }20\text{V}$         | 4.75 | 5.0 | 5.25 | V             |
|                      |              | $I_O=1\text{mA to }70\text{mA}$<br>$V_I=10\text{V}$                      | 4.75 | 5.0 | 5.25 | V             |
| Input regulation     | $\Delta V_O$ | $V_I=7\text{V to }20\text{V}$ $T_J=25^\circ\text{C}$                     |      | 32  | 150  | mV            |
|                      |              | $V_I=8\text{V to }20\text{V}$ $T_J=25^\circ\text{C}$                     |      | 26  | 100  | mV            |
| Output regulation    | $\Delta V_O$ | $I_O=1\text{mA to }100\text{mA}$<br>$T_J=25^\circ\text{C}$               |      | 15  | 60   | mV            |
|                      |              | $I_O=1\text{mA to }40\text{mA}$<br>$T_J=25^\circ\text{C}$                |      | 8   | 30   | mV            |
| Ripple rejection     | RR           | $V_I=8\text{V to }18\text{V}$ $f=120\text{Hz}$<br>$T_J=25^\circ\text{C}$ | 41   | 49  |      | dB            |
| Output noise voltage | $V_N$        | $f=10\text{Hz-}100\text{KHz}$ $T_J=25^\circ\text{C}$                     |      | 42  |      | $\mu\text{V}$ |
| Dropout voltage      | $V_D$        | $T_J=25^\circ\text{C}$                                                   |      | 1.7 |      | V             |
| Bias current         | $I_Q$        | $T_J=25^\circ\text{C}$                                                   |      | 3.8 | 6    | mA            |
|                      |              | $T_J=125^\circ\text{C}$                                                  |      |     | 5.5  | mA            |
| Bias current change  | $\Delta I_Q$ | $V_I=8\text{V to }20\text{V}$                                            |      |     | 1.5  | mA            |
|                      |              | $I_O=1\text{mA to }40\text{mA}$                                          |      |     | 0.1  | mA            |

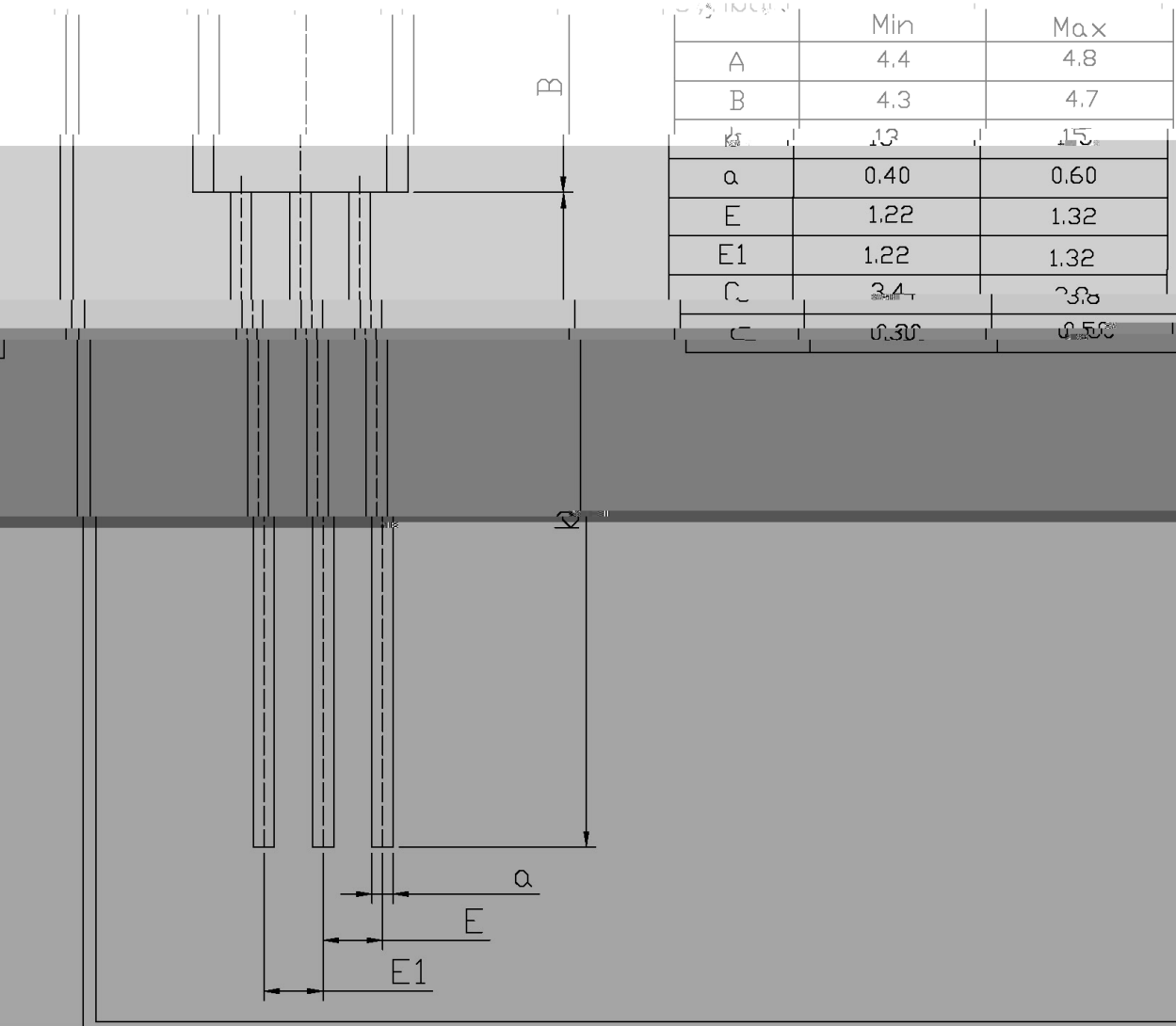
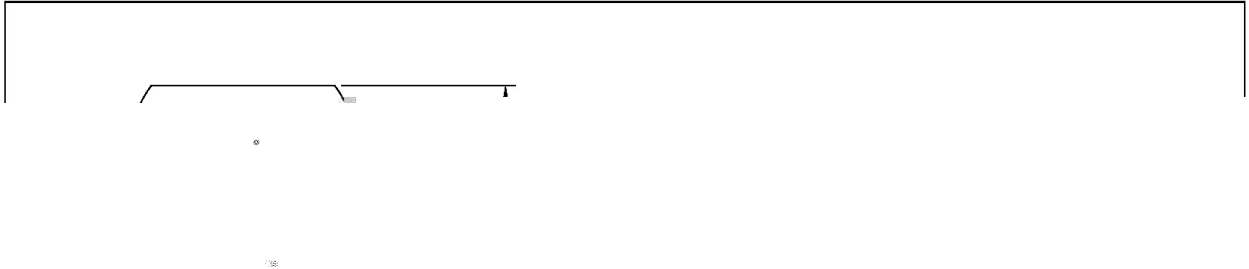
/ Electrical Characteristic Curve



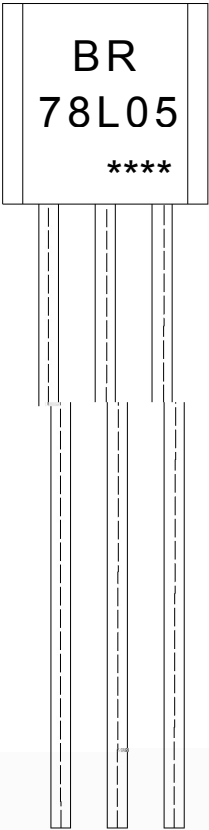
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions



BR

78L05

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Note:

BR:

78L05:

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Company Code

Product Type

Lot No. Code, code change with Lot No

( ) / Temperature Profile for Dip Soldering(Pb-Free)

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|  |

Note:

- |   |       |     |           |        |                                         |
|---|-------|-----|-----------|--------|-----------------------------------------|
| 1 | 25    | 150 | 60        | 90sec; | 1.Preheating:25~150 , Time:60~90sec.    |
| 2 | 255±5 |     | 5±0.5sec; |        | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 |       | 2   | 10        | /sec.  | 3. Cooling Speed: 2~10 /sec.            |

/ Resistance to Soldering Heat Test Conditions

270±5                      10±1 sec.                      Temp.:270±5                      Time:10±1 sec

/ Packaging SPEC.

/ BULK

| Package Type | Units          |                     |                      |                            |                      | Dimension<br>Bag | (unit mm3) |
|--------------|----------------|---------------------|----------------------|----------------------------|----------------------|------------------|------------|
|              | Units/Bag<br>/ | Bags/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ |                  |            |